USEFUL GIS TERMS

Geospatial Information System (GIS) - A generic term used to describe computer mapping systems that can graphically display individual layers of information from a data base that has location or "spatial" coordinates associated with the objects in the layer.

Layer (AKA Coverage; AKA Theme) - Similar features (streams, buildings, etc.) stored as vector coordinates associated with an individual database of OBJECT information that includes the name of each object and its spatial information.

Topology - The spatial relationship of objects within a data layer.

Some objects are **Points**, such as manhole covers or fire hydrants, and require one "X" and one "Y" coordinate value to locate each object.

Some objects are **Lines**, such as streets or streams, and require multiple points; one each to describe the beginning and ending of each line segment (vector) plus other points, as required, to indicate the shape of the line. These are also referred to as linear features.

Some objects are **Polygons** or features with shape, such as a landing zones, timber stands, training areas, reservoirs, parking lots or building footprints, where each object is a line segment (vector) that closes on itself to define the boundaries (edges) of an area object.

Imagery - Photography converted into a digital format then enhanced to maximize desired elements. In the case of our true color GIS imagery, we enhanced horizontal accuracy at ground level **(Ortho-rectified)** to +/- one meter. This is the strongest foundation for a reliably accurate GIS System.

Image Map - A map using Imagery as it's primary visual element for presenting Geospatial information.

Vector Map - A line drawing of Geospatial information (the Virginia roadmap that is in your car). In GIS, the lines are derived from the data base which was digitized from the imagery theme by theme.

Composite Map - A map with vector themes superimposed over imagery.

Global Positioning System (GPS) - We use GPS to locate features that are not apparent in the imagery or have changed since the 1996 flight.

Geospatial Information Systems allow the user to access all or some of the spatial information stored in a GIS data set. Layers can be shown or hidden to tailor the displayed information to a user's needs. For example, if only the 'Building' layer is shown, a user will only see a number of objects displayed, but without other layers in the view, there is no context to provide a sense of place. By showing other relevant layers, a user can create a map that displays the area of interest in a meaningful way. One analogy frequently used to describe the "layer" concept is that a GIS can be thought of as a series of transparent sheets that are laid on top of each other to be shown, so that each is visible either above or below the others.

Additionally, each layer can be queried in such a way that it only displays the objects that fit a requirement. As examples; you can select for only buildings that are more than 20,000 sq. ft. or you can select for only roads that are asphalt surfaced or you can select for only Firing Ranges that have latrines. If the attribute is in the data base, you can query based on that attribute.